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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/761,745	01/21/2004	Jeffrey P. Jones	2002B124-2	3637

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EXAMINER

LEUNG, JENNIFER A

ART UNIT	PAPER NUMBER
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1764

DATE MAILED: 08/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/761,745	Applicant(s) JONES ET AL.	
	Examiner Jennifer A. Leung	Art Unit 1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 June 2006.
 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 59,95 and 102-108 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 59,95 and 102-108 is/are rejected.
 7) ☐ Claim(s) _____ is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 2, 2006 has been entered.

Response to Amendment

2. Applicant's amendment submitted on May 8, 2006 has been received and carefully considered. Claims 1-58, 60-94 and 96-101 are cancelled. Claims 104-108 are newly added. Claims 59, 95 and 102-108 are under consideration.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 59, 104 and 105 are rejected under 35 U.S.C. 102(b) as being anticipated by Cherish et al. (US 4,282,010).

Cherish et al. (FIG. 1-3; column 3, line 24 to column 4, line 21) discloses an apparatus comprising:

an inlet including a heating device (i.e., an inlet for supplying inlet nozzle 40 with a feedstock at "a temperature in the range of 500 °F"; see column 3, lines 39-45. Therefore, the

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inlet must inherently comprise a heating device, not shown, for heating the feedstock up to said temperature);

a feed introducing nozzle including a first generally tubular member (i.e., an inner tube **28**) defining a feedstock pathway, the tubular member **28** having a first end (i.e., adjacent to nozzle **40**) receiving the feedstock from the heating device and a second end adjacent to a reactor unit (i.e., a fluidized bed reactor **10**), and an inner surface forming a conduit (i.e., as defined by the inner surface of the inner tube **28**), wherein at least a portion of the inner surface is formed of a commercial alloy comprising Incoloy 800 (see column 3, lines 34-36); and

a second larger diameter cylindrical tube (i.e., an outer tube **32**) oriented coaxially to the feed introduction nozzle thereby forming an outer cooling pathway around the feedstock pathway (i.e., an outer annulus **36** for flowing a cooling and fluidization booster medium supplied by inlet nozzle **44**; column 3, lines 54-59), wherein the cooling pathway **36** is closed-off at an end corresponding to the first end of the nozzle (see FIG. 2) so that cooling medium can flow toward the reactor unit **10** and exit the feed introduction nozzle within the reactor unit through a diluent outlet (i.e., via perforations **56**; FIG. 3).

Instant claims 59, 104 and 105 structurally read on the apparatus of Cherish et al.

4. Claim 104 is rejected under 35 U.S.C. 102(b) as being anticipated by Buschmann et al. (US 3,874,592).

Buschmann et al. discloses an apparatus comprising:

a feed introduction nozzle (a burner; FIG. 3) including a first generally tubular member (outer nozzle **38** comprising sections **25,26**) having a first end receiving a feed and a second end **43** adjacent a reactor unit (e.g., a synthesis-gas generator), and an inner surface **44** of the tubular

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member forming a conduit for delivering the feed from the first end to the second end. As disclosed in EXAMPLE 1, the first end of the tubular member 38/25/26 receives its feed from a heating device (i.e., a feed comprising a heavy fuel mixed with steam, heated to 320 °C in a preheating coil, and introduced through the cooled outer tube of the burner into the reaction zone of the gas generator).

In addition, Applicant's specification (beginning at section [0031]) defines a metal alloy that is "resistant to the formation of metal catalyzed side reaction by products" comprising,

"... an alloy containing at least 10 weight percent nickel, preferably at least 30 weight percent nickel, more preferably at least 50 weight percent nickel and most preferably at least 60 weight percent nickel. In contrast, conventional feed introduction nozzles, e.g., formed of carbon steel, typically contain less than 10 weight percent nickel. Nickel-containing alloys are desirable because nickel oxide forms at the inner surface of at least a portion of the FVI system. The nickel oxide coating layer on the inner surface of at least a portion of the FVI system is particularly resistant to the formation of metal catalyzed side reaction byproducts from a methanol-containing feedstock."

The nozzle of Buschmann meets the claim, because the inner surface 44 of the tubular member 38/25/26 is formed of a metal alloy types V2A or V4A (see Table I), and said alloys contain nickel within Applicant's defined ranges.

Instant claim 104 structurally reads on the apparatus of Buschmann et al.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 95, 102, 103 and 105-108 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cherish et al. (US 4,282,010) in view of Roberge (Handbook of Corrosion

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Engineering).

Cherish et al. is silent as to whether another commercial alloy, such as one of the instantly claimed alloys, may be substituted for the Incoloy 800 used for forming the inner surface of the inner tube 28. In any event, it would have been obvious for one of ordinary skill in the art at the time the invention was made to substitute another suitable, known commercial alloy for the metal alloy used in the apparatus of Cherish et al., on the basis of suitability for the intended use and absent showing any unexpected results thereof, because the Examiner takes Official Notice that the claimed commercial alloys are commonly employed in the chemical industry for constructing equipment that is exposed to conditions of high temperature and corrosion, as evidenced by Roberge (see TABLE 3.6). Furthermore, the substitution of known equivalent structures merely involves ordinary skill in the art. *In re Fout* 213 USPQ 532 (CCPA 1982); *In re Susi* 169 USPQ 423 (CCPA 1971); *In re Siebentritt* 152 USPQ 618 (CCPA 1967); *In re Ruff* 118 USPQ 343 (CCPA 1958).

6. Claims 105 and 106 are rejected under 35 U.S.C. 103(a) as being unpatentable over Buschmann et al. (US 3,874,592).

Buschmann et al. discloses that the *preferred* metal alloy comprises V2A or V4A, whereas the *prior art* metal alloy comprises Incoloy 825 or Inconel 600 (see Table 1; column 5, lines 7-32). In any event, it would have been obvious for one of ordinary skill in the art at the time the invention was made to select either of the *prior art* metal alloys for constructing the nozzle in the apparatus of Buschmann et al., on the basis of suitability for the intended use thereof, because disclosed examples and preferred embodiments do not constitute a teaching away from a broader disclosure or nonpreferred embodiments. *In re Susi*, 440 F.2d 442, 169

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USPQ 423 (CCPA 1971). A known or obvious composition does not become patentable simply because it has been described as somewhat inferior to some other product for the same use. *In re Gurley*, 27 F.3d 551, 554, 31 USPQ2d 1130, 1132 (Fed. Cir. 1994).

7. Claims 105-108 are rejected under 35 U.S.C. 103(a) as being unpatentable over Buschmann et al. (US 3,874,592) in view of Roberge (Handbook of Corrosion Engineering).

Buschmann et al. discloses that the *preferred* metal alloy comprises V2A or V4A, whereas the *conventional* metal alloys include alloys having a high nickel contents, such as Incoloy 825 at about 42% Ni, or Inconel 600 at about 72% Ni (see Table 1; column 5, lines 7-32). Although the conventionally used metal alloys of high nickel content may not be preferred due to high cost, it would still have been obvious for one of ordinary skill in the art at the time the invention was made to select a conventionally known, commercial, metal alloy of high nickel content for constructing the nozzle in the apparatus of Buschmann et al., on the basis of suitability for the intended use thereof, because disclosed examples and preferred embodiments do not constitute a teaching away from a broader disclosure or nonpreferred embodiments. *In re Susi*, 440 F.2d 442, 169 USPQ 423 (CCPA 1971). A known or obvious composition does not become patentable simply because it has been described as somewhat inferior to some other product for the same use. *In re Gurley*, 27 F.3d 551, 554, 31 USPQ2d 1130, 1132 (Fed. Cir. 1994). Furthermore, the substitution of known equivalent structures (e.g., one known metal alloy of high nickel content for another known metal alloy of high nickel content) merely involves ordinary skill in the art. *In re Fout* 213 USPQ 532 (CCPA 1982); *In re Susi* 169 USPQ 423 (CCPA 1971); *In re Siebentritt* 152 USPQ 618 (CCPA 1967); *In re Ruff* 118 USPQ 343 (CCPA 1958). The Examiner takes Official Notice that use of the instantly claimed commercial alloys

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of high nickel content (e.g., Inconel 601, 617, 625, 671 and 690, each having a nickel content above 42%) under conditions of high-temperature and corrosion is well known in the art (see Roberge; TABLE 3.6 and TABLE E.13).

Response to Arguments

8. Applicant's arguments filed May 8, 2006 have been fully considered but they are not persuasive. Beginning on page 5 (middle of the page), Applicants argue,

“Initially, the Examiner asserts that, because Cherish discloses a nozzle that introduces char fines or coals in a transport gas to a reactor vessel at a temperature in the range of 500 °F, the nozzle of Cherish “must inherently comprise a heating device, not shown, for heating the feedstock up to said temperature.” ... Applicants respectfully submit, however, that no such requirement exist. As one of ordinary skill in the art would know, it is not only possible, but common for streams to be heated remotely from the nozzle introducing them into a vessel, such that the temperature of the gas stream, when it reaches the vessel, is at or about a given temperature. The mere presence of a gas stream at an elevated temperature does not mean that the nozzle or nozzle inlet must inherently comprise a heating unit, as asserted by the Examiner.”

The Examiner respectfully disagrees. In the event that the heating device of Cherish were located remotely from the nozzle, as posed by Applicants, the apparatus of Cherish would still structurally meet the claims, because the nozzle need only to be *connected by one or more lines* to an inlet having a heating device (i.e., “... the inlet includes one or more heating devices... an oxygenate feed introduction nozzle connected by one or more lines to the inlet...” in claim 59, lines 3-6). It is noted that the features upon which applicant relies (i.e., a nozzle *directly connected by one or more lines* to the inlet including the heating device) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations

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from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Furthermore, it appears that Applicant's argument is not commensurate with their own disclosure, which shows that their heating device, too, is located remotely from the nozzle or nozzle inlet. As shown in FIG. 1, the apparatus comprises an inlet 108 including a heating device 106, wherein the inlet/heating device is connected by line 110 to the nozzle 112. The heating device 106 is located remotely from the nozzle 112 or nozzle inlet.

On page 6 (second and third paragraphs) Applicants further argue,

"... Cherish does not disclose or suggest an oxygenate feed introduction nozzle, an oxygenate feedstock, or an oxygenate feed vaporization and introduction system."

"None of the prior art references cited by the Examiner throughout this entire file history disclose or even suggest metal alloy-containing nozzles for oxygenate feedstocks that are resistant to the formation of oxygenate-specific metal catalyzed side reaction byproducts."

The Examiner respectfully disagrees and maintains that the apparatus of Cherish structurally meets the claims. The use of the term "oxygenate" adds no further structure to the "inlet" or the "feed introduction nozzle" of the apparatus, because the oxygenate is not considered part of the apparatus. The oxygenate, i.e., the methanol, has merely been cited as intended use in both the preamble and the body of the claim:

"A feed vaporization and introduction system for a methanol to olefin (MTO) reactor..."

"an oxygen inlet for receiving a methanol feedstock..."

Expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim. *Ex parte Thibault*, 164 USPQ 666, 667 (Bd. App. 1969). Inclusion of a material or article worked upon by a structure being

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claimed does not impart patentability to the claims. *In re Young*, 75 F.2d 966, 25 USPQ 69 (CCPA 1935); *In re Otto*, 312 F.2d 937, 136 USPQ 458, 459 (CCPA 1963). Also, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. Furthermore, a preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

Lastly, regarding the Examiner's use of Official Notice, the reference to Roberge (Handbook of Corrosion Engineering; TABLE 3.6 and E.13) has been cited to illustrate that the various commercial alloys claimed by Applicants are commonly used in the chemical industry for applications involving high-temperature and corrosive conditions. Also, the reference of Tiller et al. (previously cited) further illustrates that the commercial alloys of the 600 series, including Alloy 600, 690 and the like, are conventionally known in the art of nozzle construction (see column 6, lines 11-21). Similarly, commercial alloys meeting the composition requirement of ≥ 70 wt% nickel, 13-17 wt% chromium, and 5-12 wt % iron (see Tiller et al., column 5, line 66 to column 6, line 13).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer A. Leung whose telephone number is (571) 272-1449.


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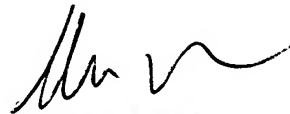
The examiner can normally be reached on 9:30 am - 5:30 pm Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn A. Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jennifer A. Leung

August 18, 2006 



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